

Integrating Public Policy Project: Market Impact Assessment

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The Project

Overview

Integrating Public Policy

Integrating Public Policy Project

The Brattle Group Work

PHASE 1: Incorporating the Cost of Carbon Study Study whether incorporating a state policy defined cost of carbon in the wholesale market would improve the overall efficiency of the NYISO energy and capacity markets

NYISO Work

PHASE 2: Market Impact Assessment Study the impacts of decarbonization goals on the current NYISO energy and capacity markets from the high penetration of low carbon or carbon-free resources

PHASE 3: Market Rule Assessment Study whether other market products or changes to the existing market structure will be necessary to meet the anticipated reliability needs

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Phase 2: Market Impact Assessment

The study

- **Goal:**
 - Study the impacts of decarbonization goals on the current NYISO energy and capacity market rules.
- **Why:**
 - To help inform whether other market products or changes to the existing market structure will be necessary to meet the anticipated reliability needs (Phase 3).
- **How:**
 - Use the NYISO's market software in study mode.
 - Add sufficient renewable resources to meet the Clean Energy Standard ("CES") 50% renewable by 2030 goal.
- **The Caveat:**
 - This study is not a planning study. The question of underlying transmission upgrades to support CES is an important one but is not part of the scope of this work.
 - We will not be making any assumptions on generator retirements, new transmission etc.

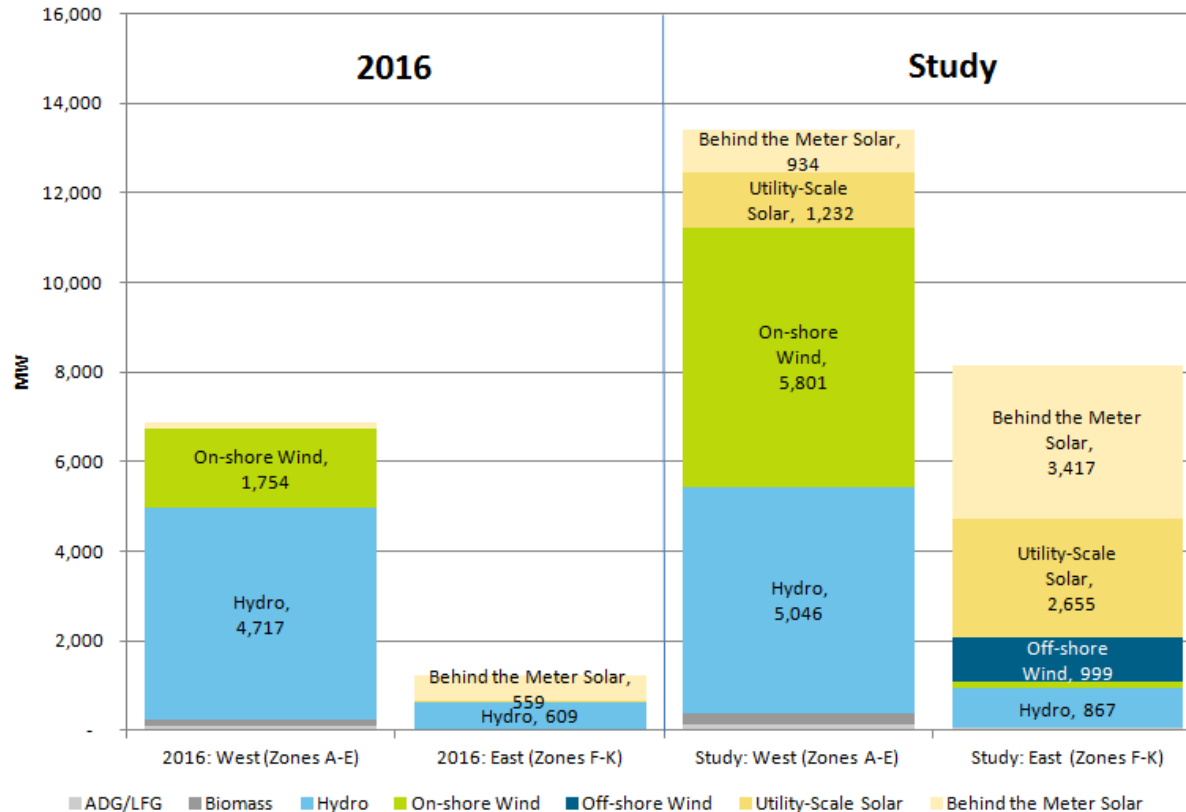
Assumptions

- The study focuses on four days in 2016: a summer peak day, a winter peak day and two shoulder days (one spring, one fall).
- How much incremental generation and where?
 - The primary source of projections for the quantity and location of qualified CES renewable generation is the NYSDPS Final Supplemental Environmental Impact Statement (“Final EIS”) in CASE 15-E-0302 using the “Blend Base Case.”
- How is the 24 hour profile determined?
 - DAM: Actual forecast data, where available, used to create the 24-hour generation shapes.
 - RT: Actual data from that day, where available, used to create 24-hour generation shapes.

Days Modeled

Day Ahead Date	Peak Load		High-Low	Gas Prices	
	Forecast (MW)	Peak Hour	Temp. ALB/LGA	TNZ6/TZ6NY	Other
Tuesday, January 19, 2016	22,168	18:00	23-13/29-18	\$4.20/\$6.25	Winter Peak
Tuesday, March 22, 2016	18,638	20:00	51-27/55-35	\$2.02/\$1.30	Indian Point 2 Refueling
Monday, July 25, 2016	31,401	16:00	89-68/91-81	\$2.91/\$2.83	Summer Peak
Thursday, November 10, 2016	19,131	17:00	51-32/57-43	\$2.45/\$1.90	High Wind

Today's renewables and study renewables



- ❖ The “study” case represents NYDPS Final Supplemental EIS installed megawatt (MW) projections.
- ❖ ADG/LFG = anaerobic digester/landfill gas generators.

The Study Plan

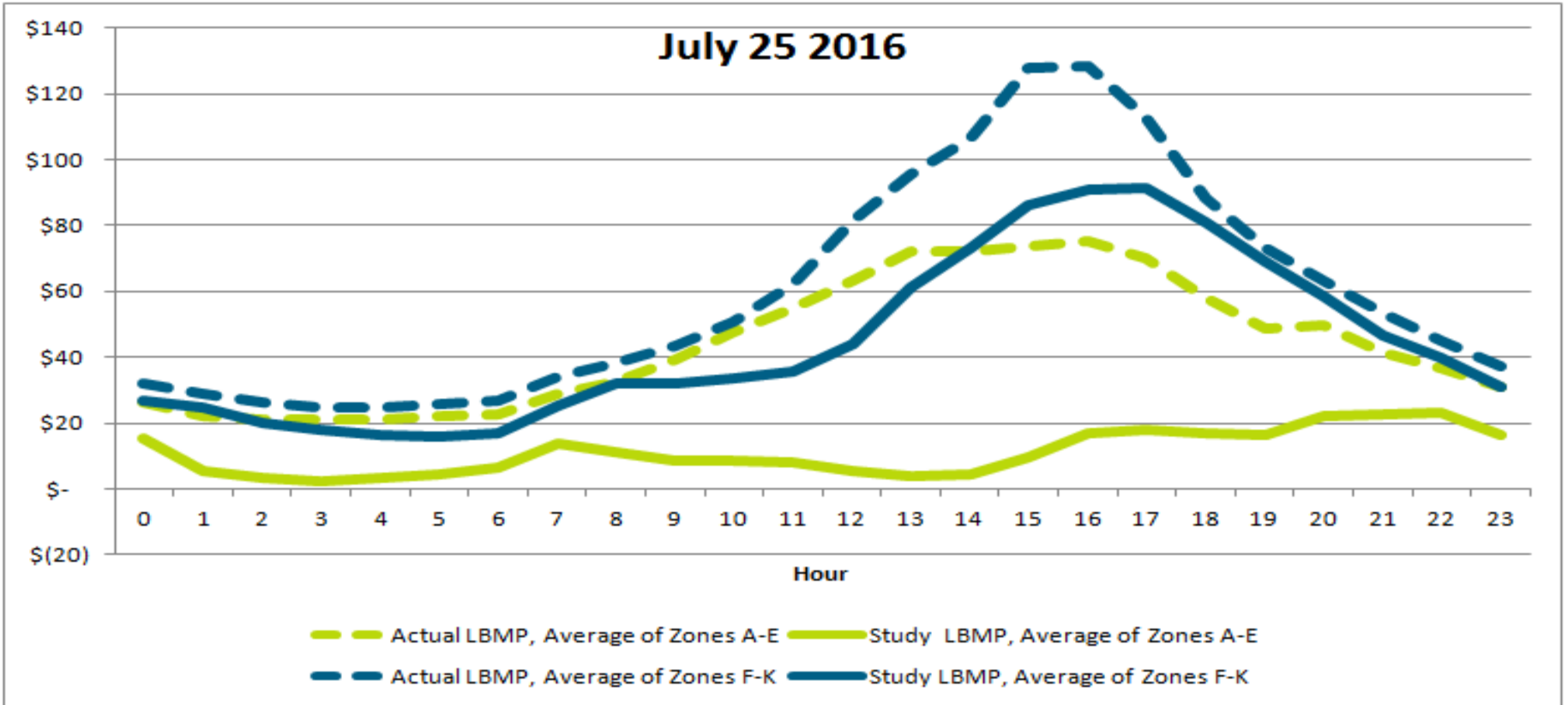
- **Proof of concept and preliminary results**
 - Day Ahead preliminary results - done
 - RTC/RTD Proof of concept is underway
 - Preliminary RTC/RTD results expected in June
- **Study results expected in July**
 - Includes adjustments to the bids of resources bidding opportunity costs.
- **Whitepaper**



Preliminary DAM Results

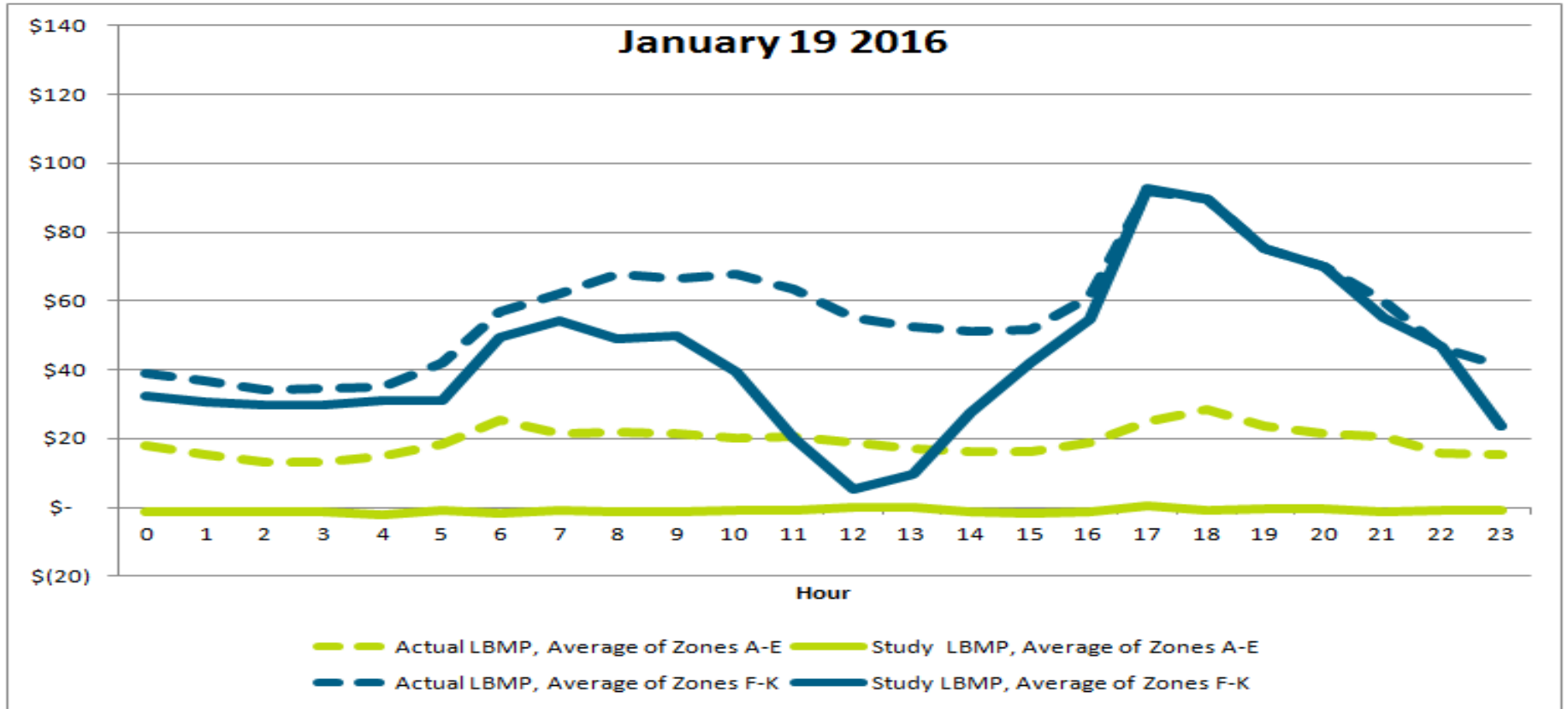
As expected, prices are near zero in the west, and prices decline in the east.

July 25 Average LBMPs



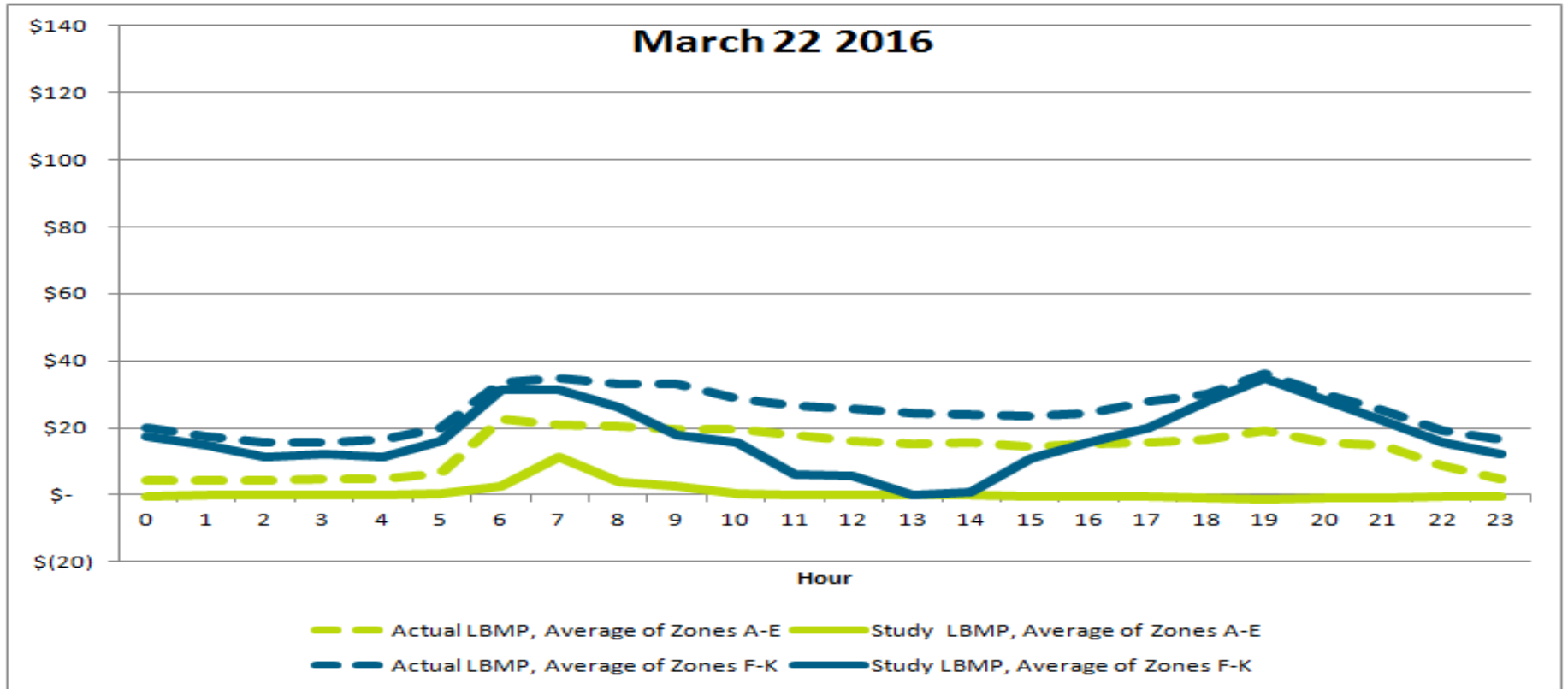
Preliminary Results

January 19 Average LBMPs



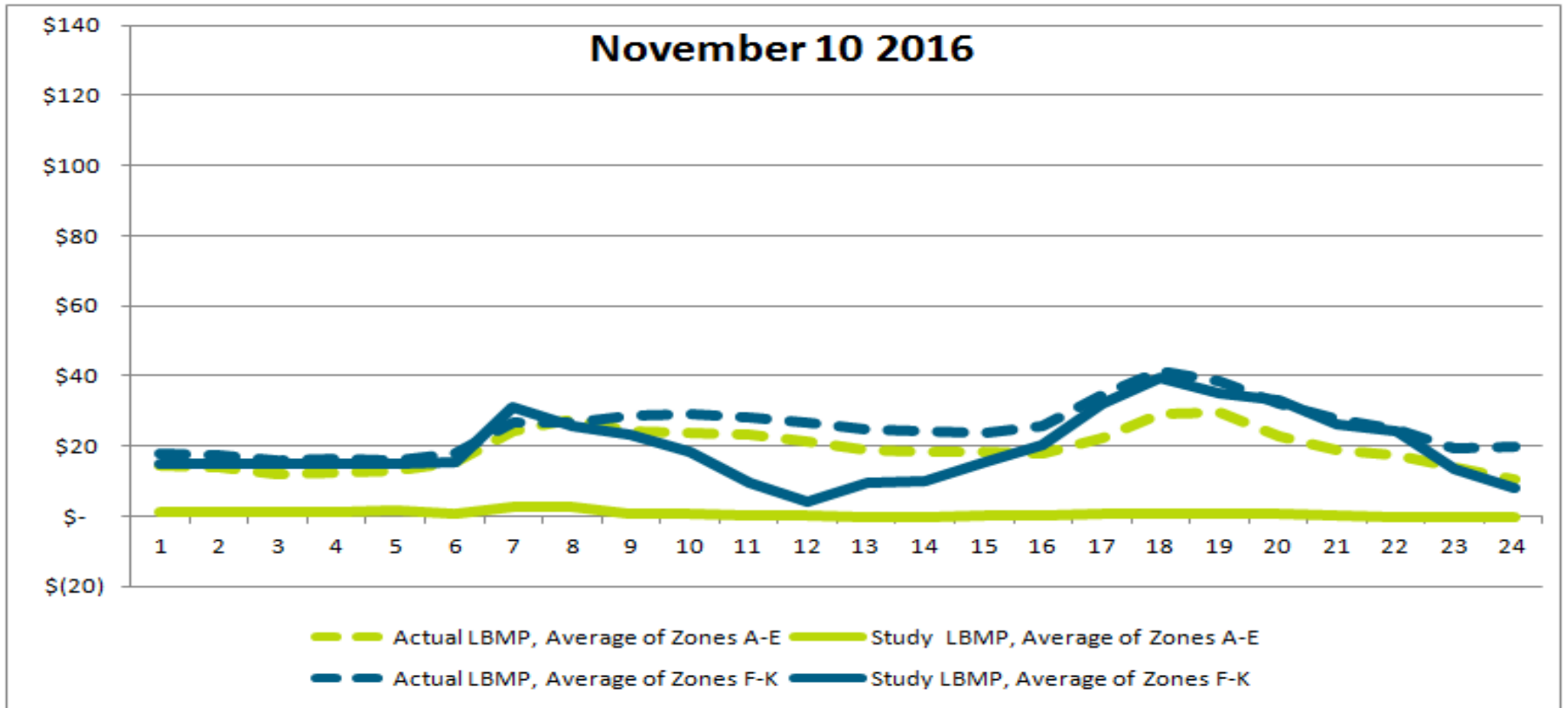
Preliminary Results

March 22 Average LBMPs



Preliminary Results

November 10 Average LBMPs



Preliminary Results

Questions?